



# Transforming Offshore Hydrogen Production: The HOP2 Project

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# Introduction



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# Agenda



Today we will cover:

- Why HOP2?
- Challenges in Offshore Hydrogen Production
- Apollo's Approach with NZTC
- Screening and Assessment Results
- Structured Process for Offshore Hydrogen
- Report layout Options for Hydrogen Production
- Safety and Structural Requirements
- Feasibility and Key Takeaways
- Beyond Hydrogen Production: Impact on Scotland

# Why HOP2?



Funded by the Scottish Government's Just Transition Fund, the HOP2 project explores the feasibility of producing hydrogen offshore by using existing oil and gas infrastructure. The goal: facilitate Scotland's transition to a low-carbon future by tapping into stranded wind resources far from shore.

# Challenges in Offshore Hydrogen Production

Key challenges include:

- Retrofitting oil and gas platforms for hydrogen production
- Ensuring structural integrity and safety in extreme conditions
- Balancing economic feasibility with sustainability goals



# Apollo's Approach with NZTC



Key elements include:

- Minimised installation and commissioning
- Integrated design solutions
- Repurposing substructures

# Screening and Assessment Results

- 300 assets were screened, with 13 shortlisted. Options were rated on:
- Load capacity
- Footprint
- Proximity to wind resources



# Structured Process for Offshore Hydrogen

Key stages:

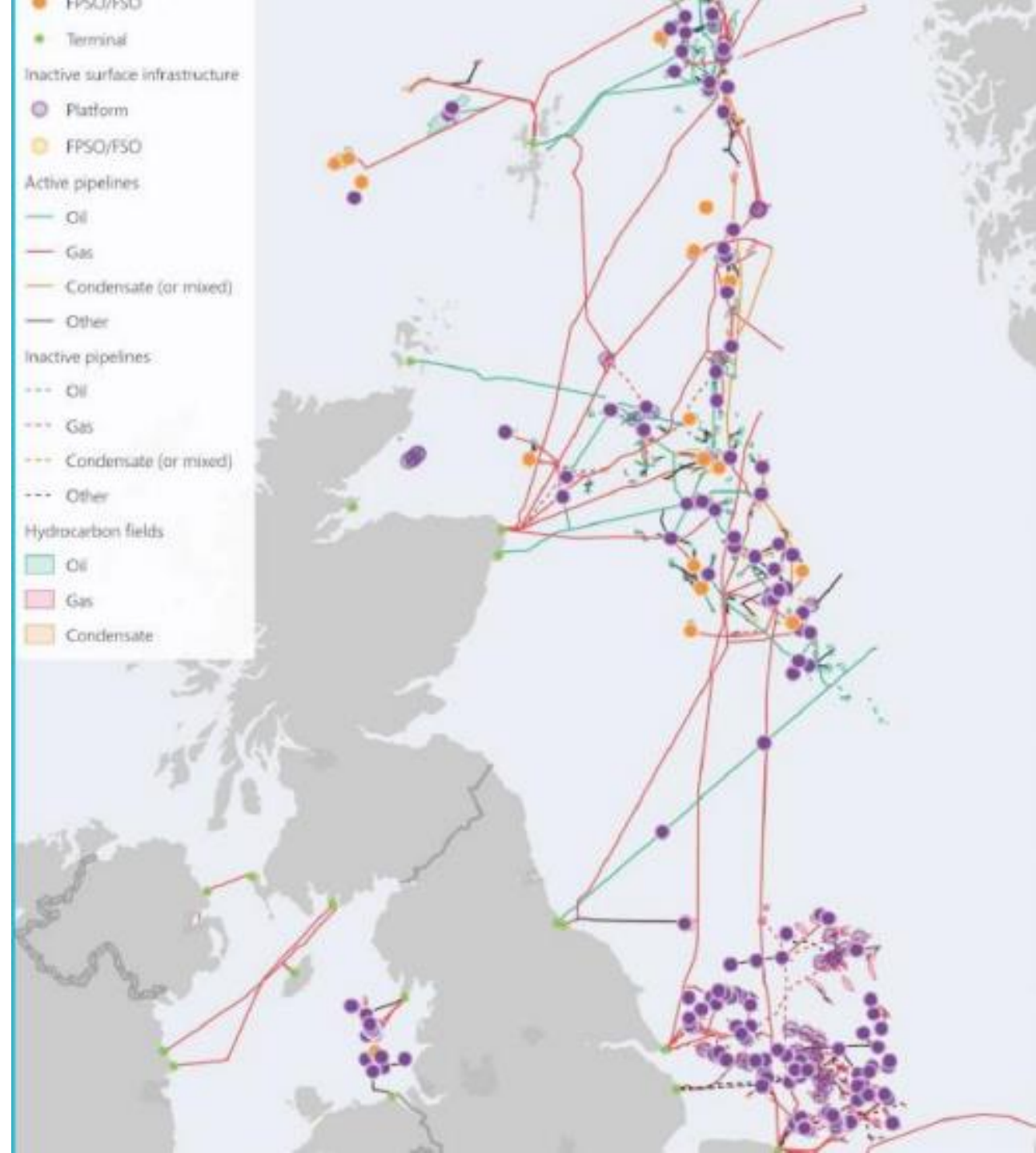
- Existing knowledge base
- Asset Screening
- Design and Layout Development





# Structured Process for Offshore Hydrogen

Figure on the right shows the extent of the offshore infrastructure which could be used in the future giving basis to the potential for repurposing as opposed to decommissioning.



# Layout Options for Hydrogen Production

## Re-use:



Option 1A: Single large platform



Option 1B: Clustered platforms



Option 1C: Bridge-linked platforms

## NEW:



Option 2: New-build asset

# Layout Options for Hydrogen Production



Option 1A: Single large platform



# Layout Options for Hydrogen Production



Option 1B: Clustered platforms



# Layout Options for Hydrogen Production



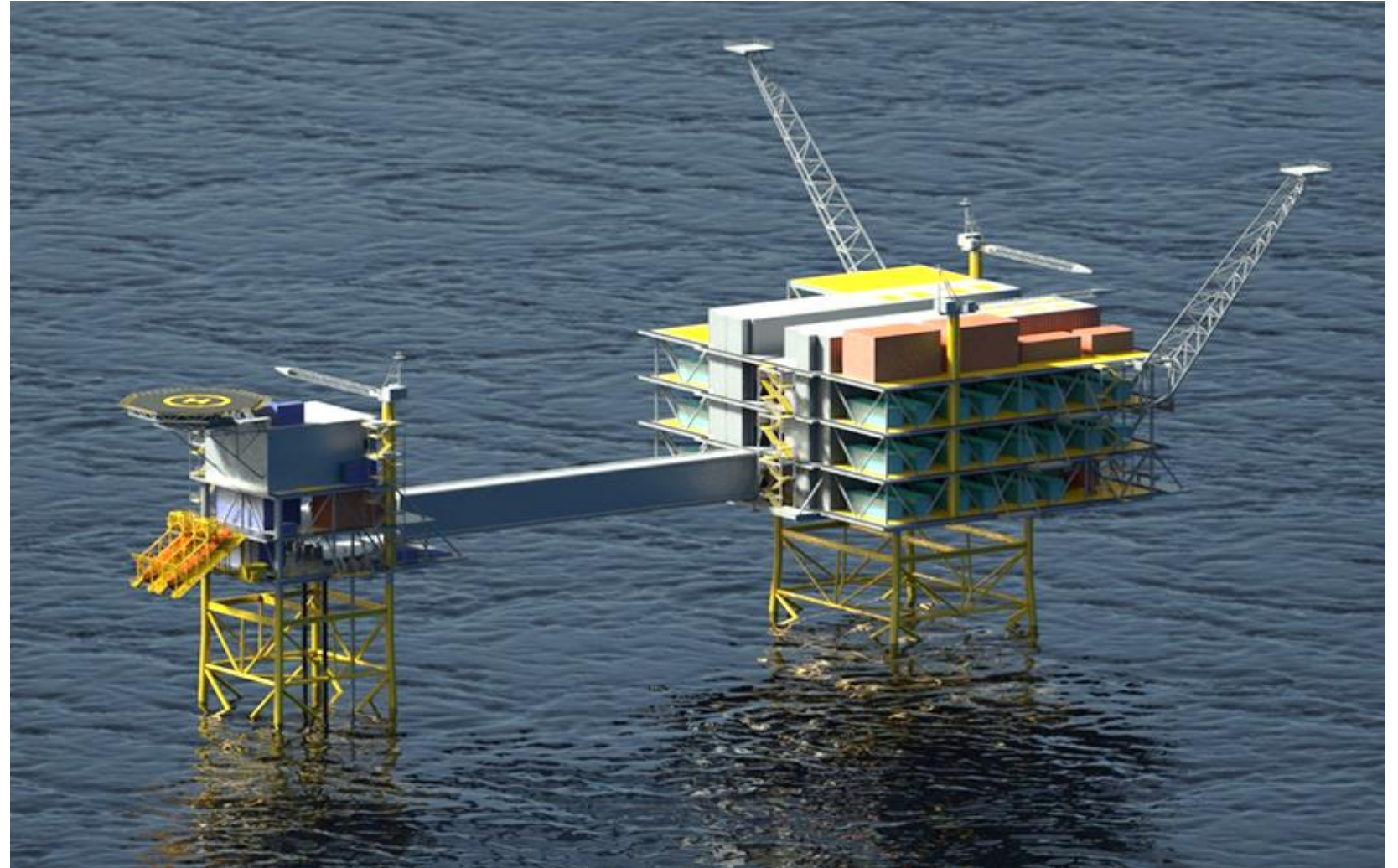
Option 1C: Bridge-linked platforms



# Layout Options for Hydrogen Production



Option 2: New-build asset



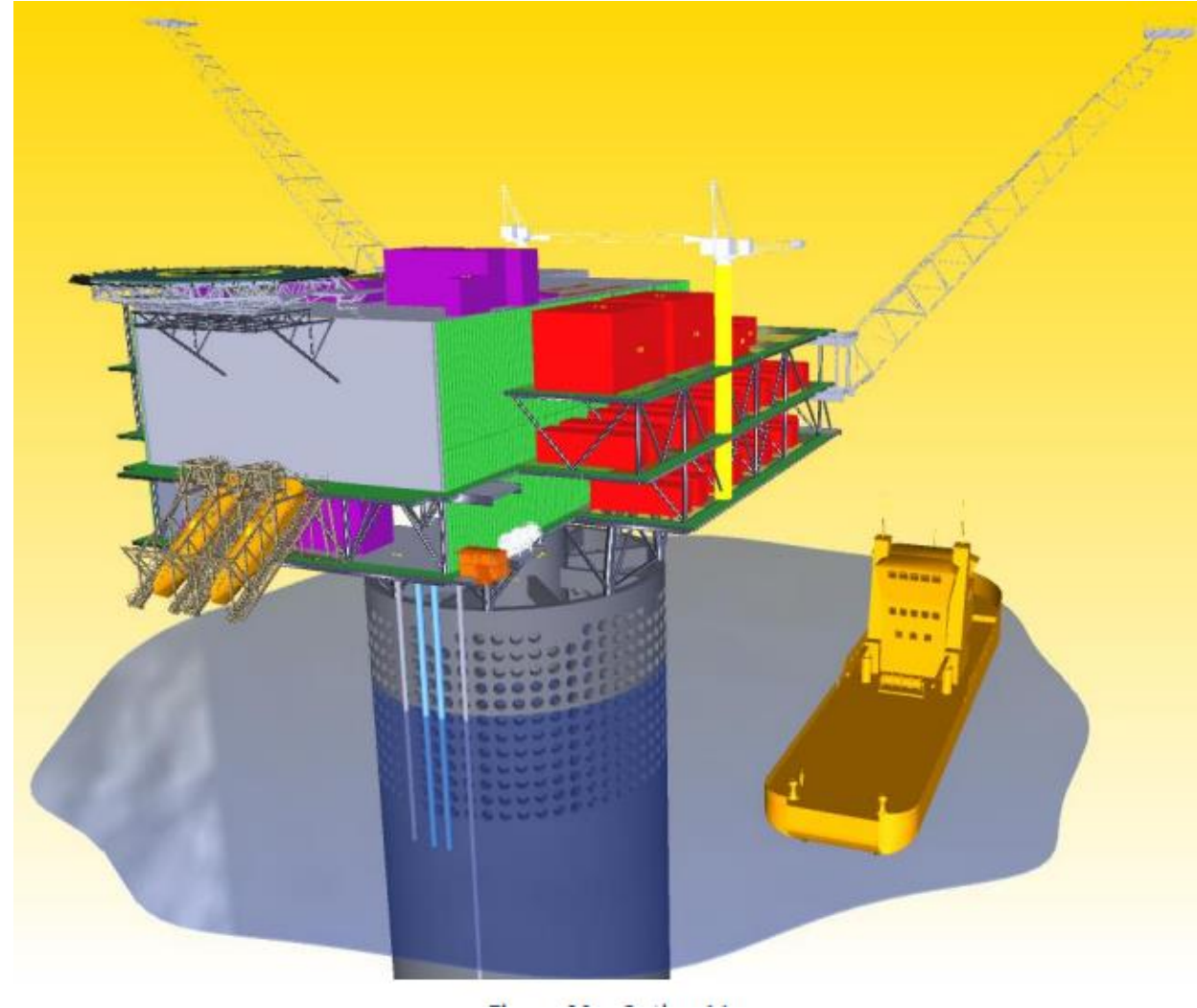
# Safety and Structural Requirements



- Integrated safety systems
- Connection methods
- Tailored equipment design

# Feasibility and Key Takeaways

Repurposing assets is feasible but complex. New-build options provide ideal layouts but higher costs. Repurposed assets reduce CAPEX by reusing jackets and pipelines, the exact % would be dependent on existing asset and mods required.

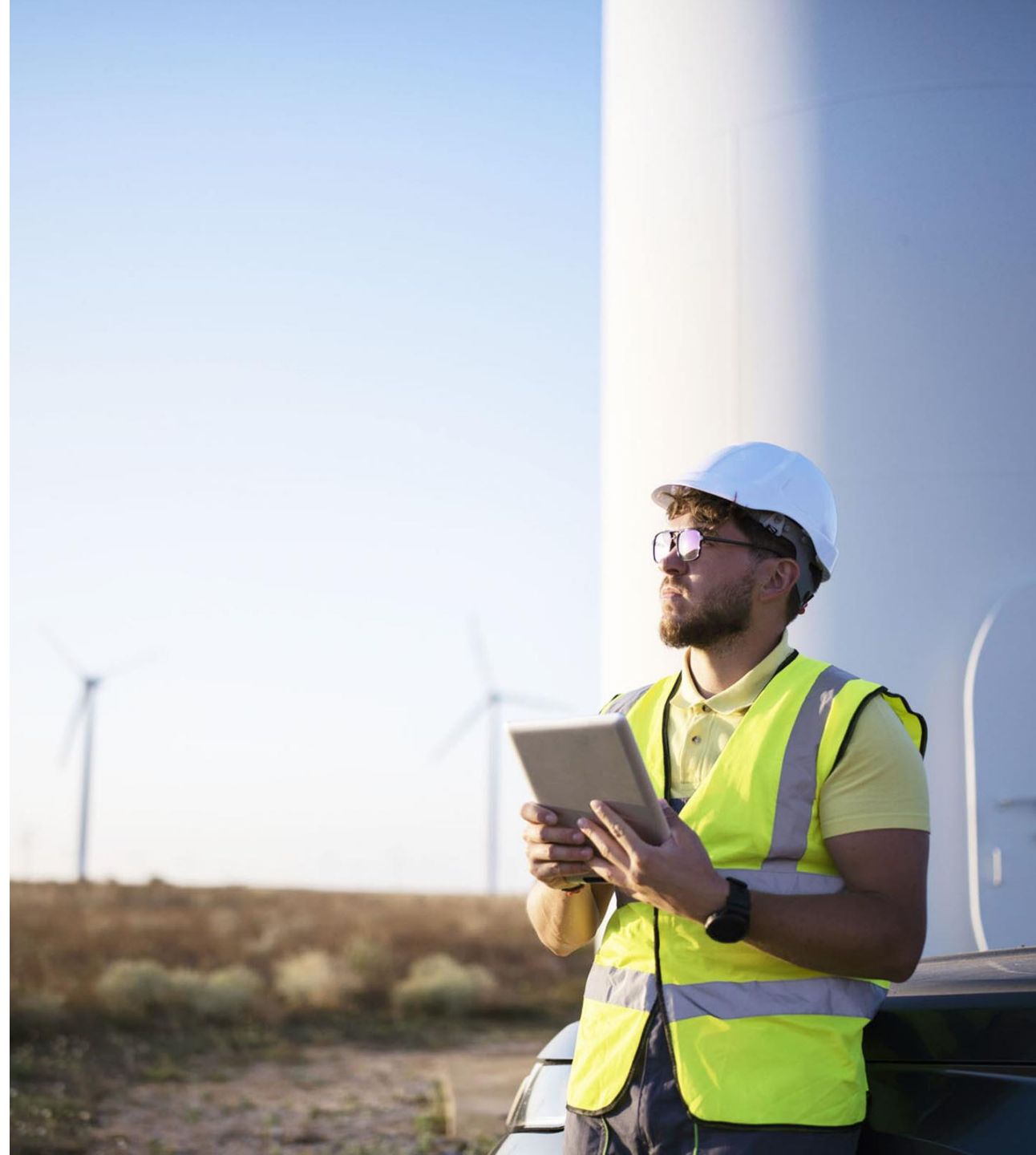




# Beyond Hydrogen Production: Impact on Scotland

HOP2's potential benefits include:

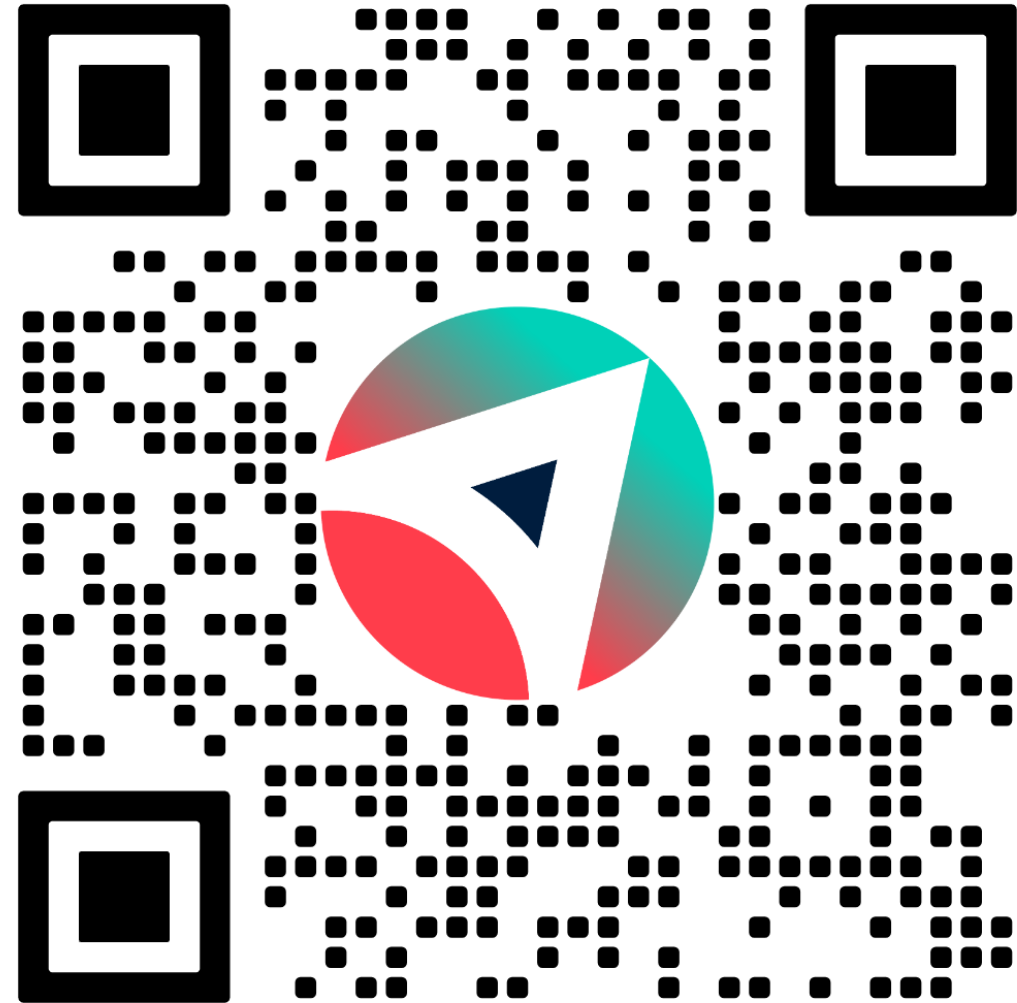
- Energy security
- Job creation
- Emissions reduction



# Questions and Discussion

Contact: [info@apollo.engineer](mailto:info@apollo.engineer)

Download the full report here:



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